AR-B5403 Board

Socket P Intel® Core™2 Duo EPIC SBC
with Intel® 945GM Express Chipset, Built in two LAN, CF type-II

User Manual

Manual Rev.: 1.0
Book Number: AR-B5403-2010.09.03

Revision

Version	Date	Author	Description
1.0	2010/09/03	Cody	Initial release

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Manual's first edition: Sept, 02, 2010

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Table of Contents

1 INTRODUCTION

Welcome to the AR-B5403 Computer. The AR-B5403 is an Intel Core 2 Duo EPIC single board computer provides variety of display outputs. In addition to VGA, DVI and LVDS display outputs, AR-B5403 supports S-Video, BNC, and component TV outputs.

1.1 Features

- Processor: Core 2 Duo, Core Duo and Celeron M
- Chipsets: 945GM + ICH7M
- Memory: DDR2 533/667MHz SO-DIMM, Maximum 2GB
- Display: VGA, DVI, LVDS, TV Out
- Storage: 1x CF, 2x SATA II,
- Audio: Line-out, Mic-in
- Communication: 2x Gbps Ethernet, 7x USB 2.0, 3x RS-232, 1x RS-232/422/485
- General: Watchdog timer, 8-bit GPIO, and PCI-104 expansion slot.

Specifications

System	
CPU	Support Intel Core 2 Duo/Core Duo/Core Solo/Celeron M CPU T7400 / T5500 / T2500 / CM440 CPU: L7400
Chipset	Intel 945GME+ICH7M
FSB	533/667MHz
Memory	One SO-DIMM socket support 667/533 MHz DDR2 SDRAM up to 2GB 1G Bytes 667MHz DDRII pre-installed
Video	
Graphic Controller	Intel 945GME integrated GMA 950 graphic controller
Video Memory	DVMT 3.0, Maximum 256MB shared
Video Interface	1 x VGA port (DB15)
Storage	
SATA	2 x SATA II port,
CF	1 x External Compact Flash Type I/II socket
Disk Bay	1 x Anti-shock 2.5" HDD bracket swappable without open case
I/O	
Ethernet	2 x Gbps RJ45 with LED, Broadcom BCM5787
Serial Port	4 x RS-232

	(2 x DB9, 2 x pin header, COM3 for reserve for PIC on power circuit, COM4 for GPS
USB	7 x USB2.0 (4 x external port, 3 x pin header)
GPIO	4-bit GPIO (2 In, 2 Out) with 5 pin terminal block, 2-in/GND/2-out
Audio	IC: Realtek ALC655 Interface : MIC-In, SPK-Out
Remote control	1 x Remote control
Fuse	7.5A
Antenna Hole	1 x SMA for GPS, 1 x SMA for 3.5G, 1 x SMA for WiFi+Bluetooth
miniPCIe	1 x miniPCIe option for MC8790
SIM	SIM slot x1, SIM card changeable without opening case, latch to protect SIM uncertainly touch
Expansion	
PCI-104	Keep design, remove PCI-104 slot
Others	
GPS(option)	Globalsat ER-332
3.5G(option)	Sierra MC 8790/8790V, through miniPCIe slot on AR-B5403
WiFi(option)	(1)2 in 1 module (WLBT-Combo-E), (2)
Bluetooth	2 in 1 module (WLBT-Combo-E)
Software	
OS support	Windows XP/ XP embedded, Linux FC 6 /7
Power	Power onboard design(AR-B5403) ● Wide range input DC 9V~32V ● Fuse Design ● Smart ATX power function: a. Power on/off retry b. Adjustable delay time for system OFF by Switch on power module (Mode2~Mode7) c. System on/off by Vehicle ignition or Remote switch button d. Low Power input monitoring, Auto shutdown ● S/W configurable by COM3 ● Remote switch(audio jack) ● System status LED(blue) ● Embedded power local switch AR-PW0932V default is Mode 2
Mechanical & Environment	
Thermal Design	Heat pipe solution
Chassis Material	Metal steel
Bracket	Bracket with anti-thief function (Locker option)
Dimension	T.B.D.
Vibration	IEC 60068-2-64 5~500Hz, 3GRMS for SSD/CF, 1GRMS for 2.5”HDD, operating
Shock	IEC 60068-2-27 50G-500m/s -11ms, operating
Operating Temp.	-15~50℃ with Industrial Grade CF or SSD
Storage Temp.	-40~80℃
Certification	CE/FCC class B

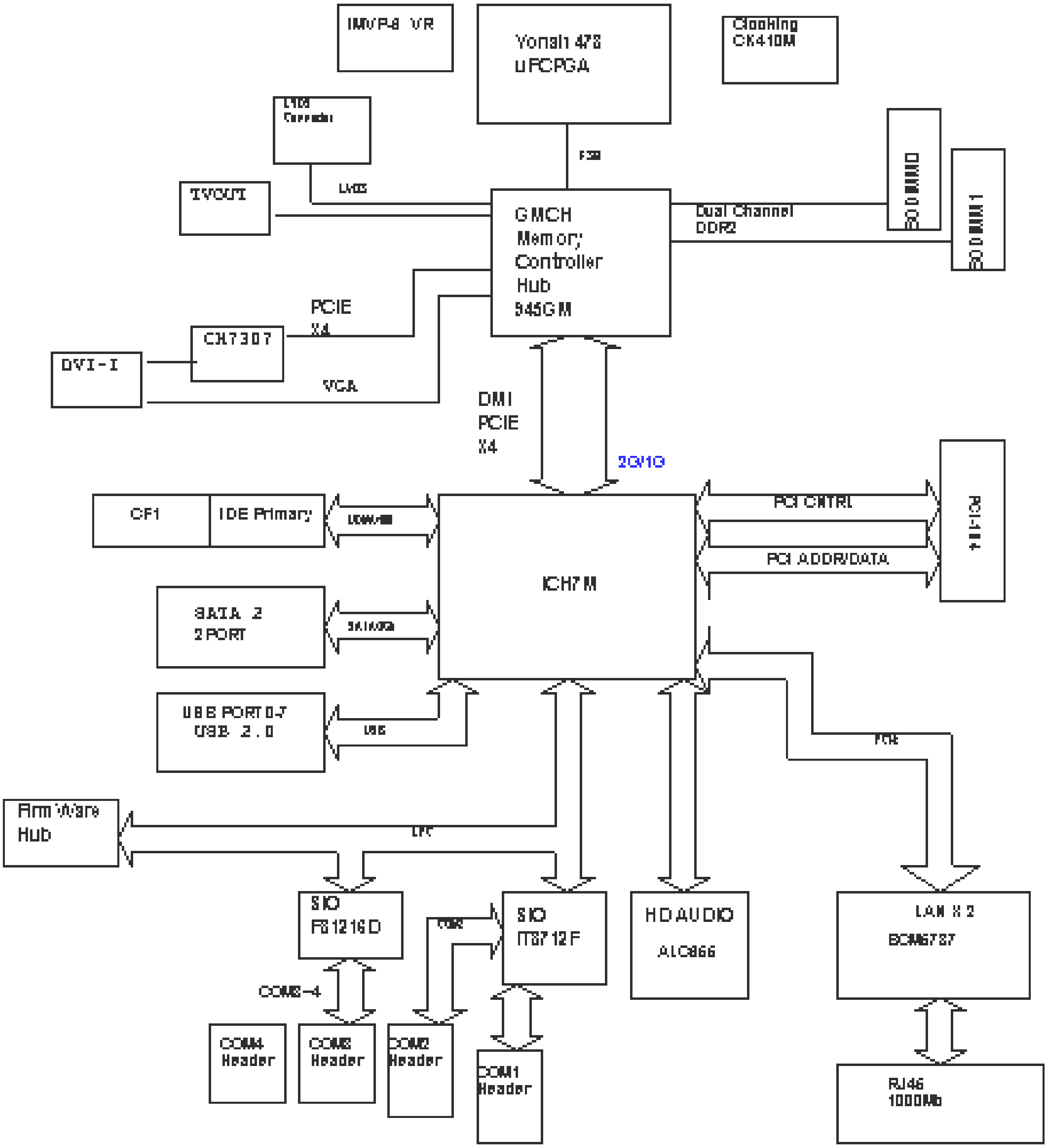
1.2 Package Contents

Check if the following items are included in the package.

- Quick Manual
- AR-B5403 board
- 1 x Software Utility CD

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1.3 Block Diagram

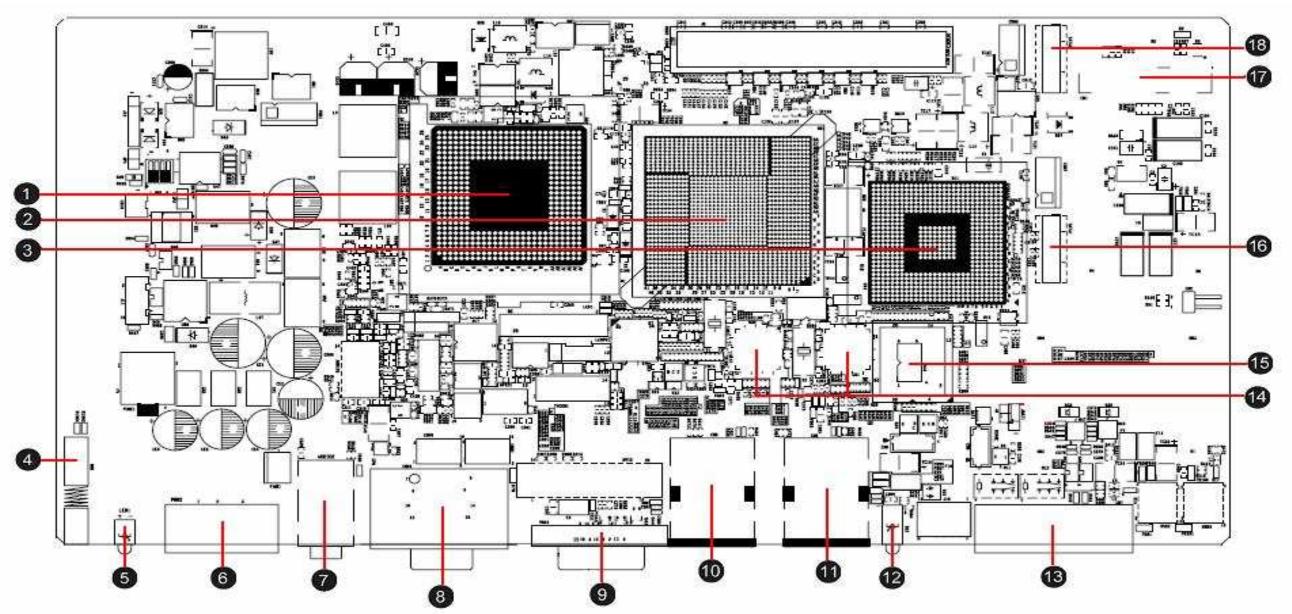


2 H/W INFORMATION

This chapter describes the installation of AR-B5403. At first, it shows the Function diagram and the layout of AR-B5403. It then describes the unpacking information which you should read carefully, as well as the jumper/switch settings for the AR-B5403 configuration.

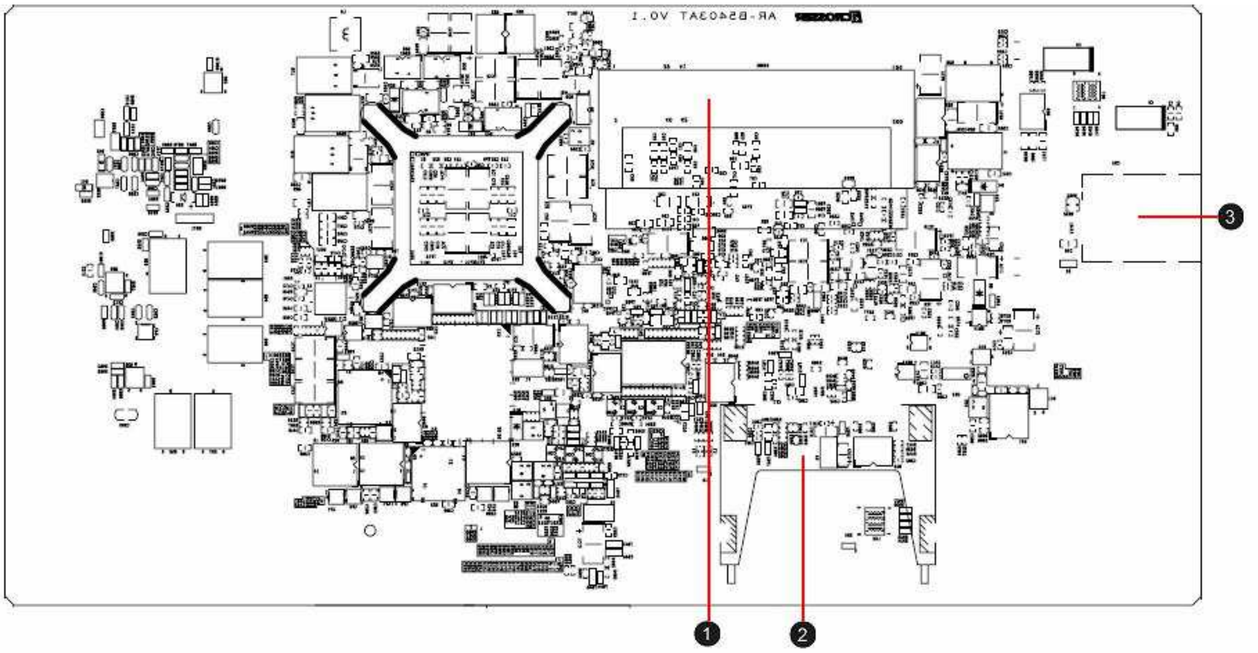
2.1 Locations

2.1.1 Top Side



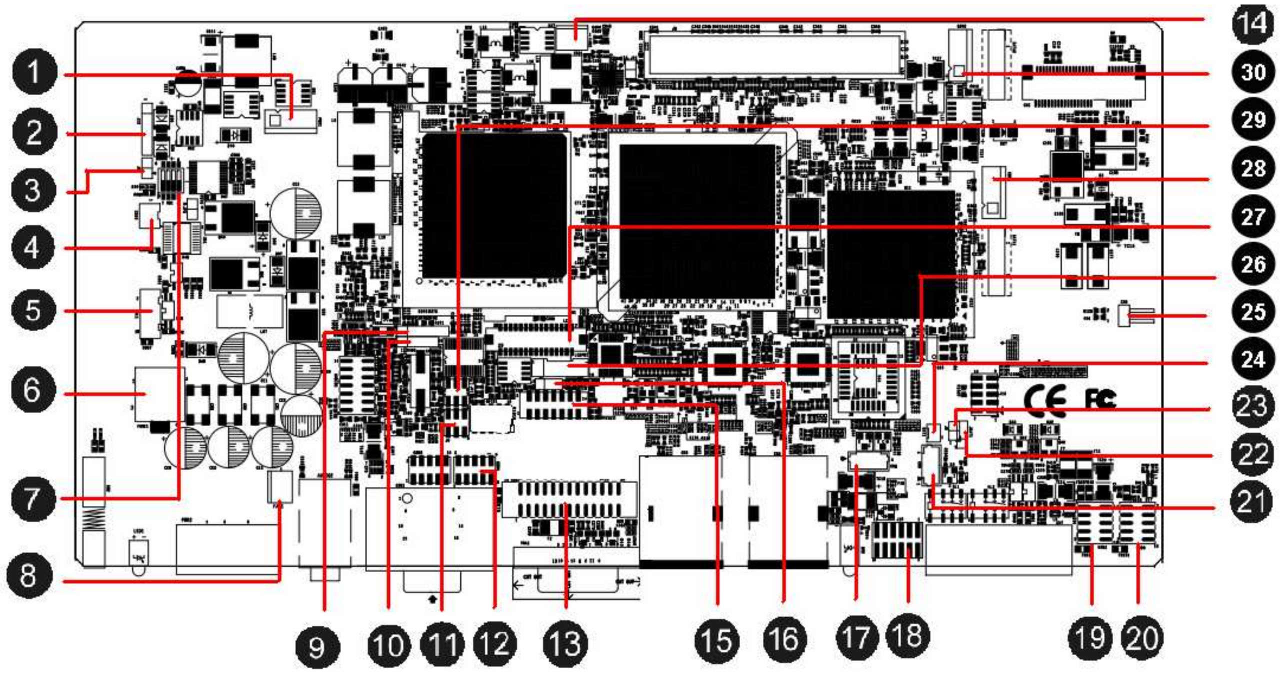
1	**CPU** CPU Socket	10	**USB Port and LAN** 2 USB and 1 RJ-45 for LAN
2	**GMCH** Graphic Memory Control Hub Intel 945GME	11	**USB Port and LAN** 2 USB and 1 RJ-45 for LAN
3	**ICH7M** Graphic Memory Control Hub Intel GM45	12	**Power LED and HDD LED** Power LED and HDD LED
4	Local Switch 12V Power Switch	13	**GPIO Port** User Defined GPIO Port
5	**Status LED** Machine Status LED	14	**LAN Chip** Broadcom BCM5787 Gigabit Ethernet
6	Power Connector 12V Power Connector	15	**BIOS** BIOS IC
7	**Remote Switch and Audio** Remote Power Control and Audio I/O	16	**SATA1** SATA Data Connector
8	**COM Port** RS232 Serial Ports (COM1 & COM2)	17	**Mini-PCIE for 3G module** 3G Module slot with USB interface
9	**VGA** VGA Port	18	**SATA2** SATA Data Connector

2.1.2 Bottom Side



❶	**SO-DIMM Socket** SO-DIMM Socket for DDR2	❸	**SIMM Card Socket** SIMM Card Socket for 3G Module
❷	**CF Slot** CF Slot for CF Card support IDE Mode		

2.1.3 List of Connector and Jumper Setting

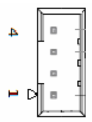


1	PWR1 12V, 5V Output	12	COM4 Pin Header for COM4 Port	23	J6 CF Card Master setting
2	J12 Connector for Programming PIC	13	DVI3 DVI Output Port	24	BAT1 Battery Input
3	JP4 Define KEY_SW, ENG_STS input type	14	FAN2 CPU FAN Connector	25	CN2 3.5G Carrier Board Status LED
4	CN10 Reserve Pin	15	TVCON1 TV Output Port	26	LCDPW1 Backlight Power and Control signal
5	J11 Front Panel Connector	16	J1 LVDS Panel Power Select	27	LCD1 LCD Signal Output
6	Fuse1 Fuse Connector	17	CN8 +5V, +12V for External Module	28	CON7 SATA Device Power
7	SW1 DIP Switch for Power Mode Select	18	J10 Jumper Select for GPIO Configuration	29	JP1 COM2 Transfer Protocal setting
8	FAN1 System Fan Connector	19	USB2 Pin Header for USB Ports	30	CON2 SATA Device Power
9	IR1 IR Port	20	USB3 Pin Header for USB Ports		
10	J5 COM2 RS-422,RS-485 Output	21	CN9 +5V, +12V for External Module		
11	J9 Power SW, Reset, Buzzer Connector	22	JBAT1 Pin Header for CMOS Clear		

Revision: 1.0

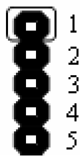
2.2 Connector and Jumper Setting Table

1. PWR1 (12V,5V Output)



PIN	DEFINE
1	+12V
2	GND
3	GND
4	+5V

2. J12 (Connector for PIC Programming)



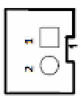
PIN	DEFINE
1	+5VSB
2	ISPDATA
3	ISPCLK
4	ISPVPP
5	GND

3. JP4 (Define Key_SW, ENG_STS Input Type)



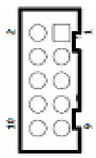
	Status
Open	Active High
Short	Active Low

4. CN10 (GPO reserve)



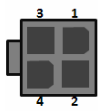
PIN	SIGNAL
1	GPO
2	GND

5. J11(Front Panel Connector) (Note1)



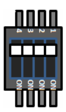
PIN	Signal	PIN	Signal
1	PWRBTN_IN	2	GND
3	LOC_SW	4	GND
5	KEY_SW	6	GND
7	ENG_STS	8	GND
9	STS_LED	10	GND

6. FUSE1 (Connect to Fuse)



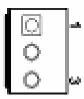
PIN	Signal
1,2	Fuse Out
3,4	Fuse In

7. SW1 (DIP switch for power mode select)(Note2)



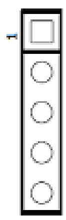
Mode	1	2	3	4
0	ON	ON	ON	ON
1	ON	ON	ON	OFF
2	ON	ON	OFF	ON
3	ON	ON	OFF	OFF
4	ON	OFF	ON	ON
5	ON	OFF	ON	OFF
6	ON	OFF	OFF	ON
7	ON	OFF	OFF	OFF

8. FAN1 (System FAN)



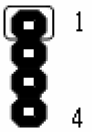
PIN	SIGNAL
1	GND
2	12V
3	FAN Speed Detect

9. IR1 (IR Pin Header)



PIN	DEFINE
1	+5V
2	NC
3	IR_RX
4	GND
5	IR_TX

10. J5 (COM2 RS-422,RS-485 Output)



PIN	SIGNAL
1	TX+
2	TX-
3	RX+
4	RX-

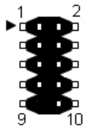
11. J9 (Power Button & Reset & Buzzer)



※PWRBTN for ATX mode only

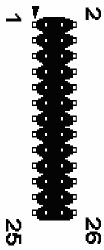
PIN	SIGNAL	PIN	SIGNAL
1	5V	2	PCBEEP
3	GND	4	RESET
5	GND	6	PWRBTN

12. COM4 (Pin Header for COM4)



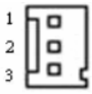
PIN	SIGNAL	PIN	SIGNAL
1	DCD	2	DSR
3	RX	4	RTS
5	TX	6	CTS
7	DTR	8	RI
9	GND	10	NC

13. DVI3 (DVI Port)



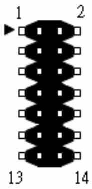
PIN	SIGNAL	PIN	SIGNAL
1	GND	2	TD0
3	TD0-	4	GND
5	TD1	6	TD1-
7	GND	8	TD2
9	TD2-	10	GND
11	TCK	12	TCK-
13	HPD	14	DDCCLK
15	VCC	16	DDCDATA
17	RED	18	GND
19	GREEN	20	GND
21	BLUE	22	GND
23	VSYNC	24	CRT DDCCLK
25	HSYNC	26	CRT DDCDATA

14. FAN2 (CPU Fan connector)



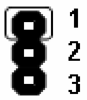
PIN	SIGNAL
1	GND
2	12V
3	FAN Speed Detect

15. TVCON1 (TV Output Port)



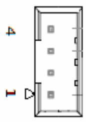
PIN	Signal	PIN	Signal
1	S-Video Luminance	2	Reserve
3	GND	4	Reserve
5	CVBS	6	NC
7	GND	8	Reserve
9	S-Video Chrominance	10	GND
11	GND	12	NC
13	NC	14	NC

16 J1 (LCD Panel Power Select)



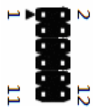
STATUS	SETTING
1-2 close	+5V
2-3 close	+3.3V

17 CN8 (Power Connect for +12V and +5V)



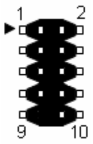
PIN	DEFINE
1	+12V
2	GND
3	GND
4	+5V

18 J10 (Jumper Select for GPIO configuration)



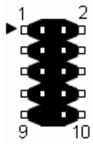
PIN	DEFINE
1-2	NC(DEFAULT)
3-4	NO
5-6	GND(DEFAULT)
7-8	+5V
9-10	+12V
11-12	+EXT

19. USB2 (USB Output Port)



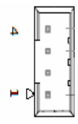
PIN	SIGNAL	PIN	SIGNAL
1	+5V	2	+5V
3	DATA3-	4	DATA2-
5	DATA3+	6	DATA2+
7	GND	8	GND
9	GND	10	GND

20. USB3 (USB Output Port)



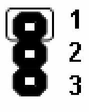
PIN	SIGNAL	PIN	SIGNAL
1	+5V	2	NC
3	DATA7-	4	NC
5	DATA7+	6	NC
7	GND	8	NC
9	GND	10	NC

21. CN9 (Power Connect for +12V and +5V)



PIN	DEFINE
1	+12V
2	GND
3	GND
4	+5V

22. JBAT1 (Pin Header for CMOS Clear)



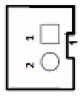
STATUS	SETTING
1-2	Normal
2-3	Clear CMOS

23. J6 (CF Card status)



STATUS	SETTING
SHORT	Master
OPEN	Slave

24. BAT1 (Battery Connector)



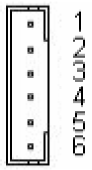
PIN	SIGNAL
1	VBAT
2	GND

25. CN2 (3.5G Module Status)



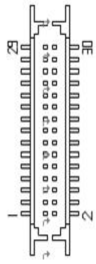
PIN	SIGNAL
1	+3.3V
2	Status Signal

26. LCDPW1 (Backlight Output)



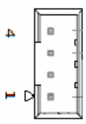
PIN	DEFINE
1	+12V
2	+12V
3	GND
4	Backlight Enable
5	GND
6	Backlight Control

27. LCD1 (LCD Signal Output)



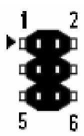
PIN	SIGNAL	PIN	SIGNAL
1	LCDVCC	2	GND
3	B CLK-	4	B CLK+
5	GND	6	B DATA2-
7	B DATA2+	8	GND
9	B DATA1-	10	B DATA1+
11	NC	12	NC
13	B DATA0+	14	BDATA0-
15	GND	16	A CLK+
17	A CLK-	18	GND
19	A DATA2+	20	A DATA2-
21	I2C CLK	22	A DATA1+
23	A DATA1-	24	I2C DATA
25	A DATA0+	26	A DATA0-
27	NC	28	NC
29	LCDVCC	30	LCDVCC

28. CON7 (+12V,+5V,+3.3V for SATA HDD Power)



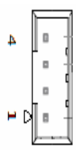
PIN	DEFINE
1	+12V
2	GND
3	+3.3V
4	+5V

29. JP1 (COM2 Type Setting)



STATUS	SETTING
1-2	RS-232
3-4	RS-422
5-6	RS-485

30. CON2 (+12V,+5V,+3.3V for SATA HDD Power)



PIN	DEFINE
1	+12V
2	GND
3	+3.3V
4	+5V

Note1,2 Power smart function

Definition

1. Soft off cycle:
   A period when received power off signal to generate a off signal (A 500mS pulse, High-Low –High or Low-High-Low depends on SIO configuration, to mother board's Power Button Pin)
2. Hard Off cycle:
   A period when system off (S5) to stand by removed (G3). In another word, the A period of 5VSB on to off (when system already off)

Notes: S5 and G3 is follow by ACPI

Mode description

The main power-in is controlled by the switch on chassis.
Maximum 16 Modes adjusted by 4 switches. (Mode 8 to mode 15 are reserved for future use).

Mode 0: ATX mode.

A. 5V Standby is always on.
B. Input voltage is not monitored.
C. Power on/off is controlled by remote switch
D. Local Switch priority is higher than remote switch. This is controlled by hardware.

Mode 1: AT mode

A. Power output immediately after input is present.
B. Power can only be turned off by turning off local switch. The remote switch will be ignored by Power smart function. In this mode the BIOS shall be set to AT mode.

Smart Mode (Mode 2 to Mode 7)

Mode 2: See Figure 1

A. Power on is controlled by **ignition (remote switch does not make any action to power on)**.
B. **Power on retry:** If the motherboard cannot be turned on normally (/PSON does not go to low), the Power smart function will turn off 5VSB, and then turn on 5VSB and retry. Send "on" pulse to motherboard again. The power board will re-try this procedure until successfully turn on motherboard.
C. Power smart function sends "ON" pulse to motherboard when ignition is on for more than 2 seconds.
D. Power smart function will ignore the status change of ignition after ON pulse is send to motherboard for 3 minutes. After this period, the Power smart function will start to check its status. This can avoid an improper "OFF" process before the OS is complete booted.
E. Power off is controlled by **remote switch or ignition. Remote switch** has higher priority than ignition. (Remote switch is optional).
F. Power smart function sends "off" pulse to motherboard **5 seconds** after ignition is turned off or remote switch is pressed. (Soft delay)
G. Power smart function will ignore the status change of ignition and remote switch during the "OFF" pulse is sent out and the /PSON return to high. This will avoid an improper ON process before the motherboard is completely shot off.

H. The **digital output (optional)** will go from high to low at the moment that "OFF" pulse is sent to motherboard. The low state will be kept until /PSON back to high. If the /PSON does not back to high within 3 minutes, the Power smart function will enter a retry cycle (described in next section).

I. **Power off retry:** If the motherboard cannot be shouted down normally (/PSON does not go to high) within 3 minutes after "OFF" pulse is sent, the Power smart function will send off pulse to motherboard again. If the motherboard still cannot be shouted down normally, the power output will be turned off directly. (Figure 3)

J. Hard off delay: **1 minutes,** During this period system can be turned on again if the off procedure already finished and power button is pushed again(or ignition on again)

Mode 3:

A. Same as mode 2 except for soft/hard off delay time

B. Soft off delay: **1 minute**

C. Hard off delay: **5 minutes**

Mode 4:

A. Same as mode 2 except for soft/hard off delay time

B. Soft off delay: **30 minute**

C. Hard off delay: **2 Hours**

Mode 5: See Figure 2

Same as mode 2 except that the power on is controlled by **remote switch.**

A. Power on is controlled by **remote switch (ignition must be turned on 2 seconds before remote switch is pressed)**.

B. AR-PW0932V sends off pulse to motherboard **5 seconds** after ignition is turned off or remote switch is pressed. (Soft delay)

C. Hard off delay: **1 minutes**

Mode 6:

A. Same as mode 5 except for soft/hard off and delay

B. Soft off delay: **1 minute**

C. Hard off delay: **5 minutes**

Mode 7:

A. Same as mode 5 except for soft/hard off and delay

B. Soft off delay: **30 minute**

C. Hard off delay: **2 Hours**

Mode15(Software control mode):

A. Setting by AP

B. Software mode default as Hardware mode 2

C. Soft off delay time can be set

D. Hard off delay time can be set

E. In-Vehicle system power on by ignition or Remote button can be set

F. Show Ignition status / Voltage(for AP only)

G. Create a button "Set default"

Plan AP screen→

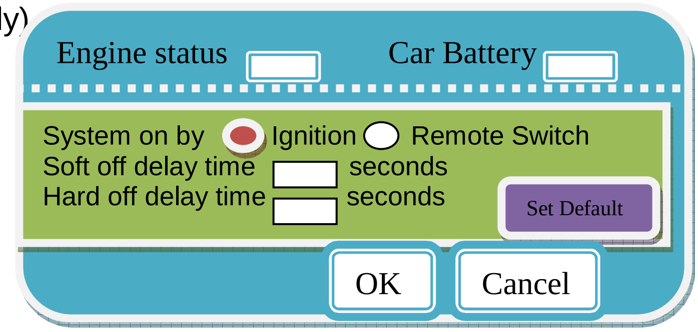


Table 1. Control Mode

Mode	Soft OFF Delay	Hard OFF delay	Power ON Control	Power OFF Control
0 (ATX)	No	No	Remote Switch	Remote Switch
1(AT)	No	No	Local Switch	Local Switch
2	5 seconds	1 minute	Ignition	Ignition / Remote Switch
3	1 minute	5 minutes	Ignition	Ignition / Remote Switch
4	30 minutes	2 hours	Ignition	Ignition / Remote Switch
5	5 seconds	1 minute	Remote Switch	Ignition / Remote Switch
6	1 minute	5 minutes	Remote Switch	Ignition / Remote Switch
7	30 minutes	2 hours	Remote Switch	Ignition / Remote Switch
15 (Software control)	By user setting	By user setting	By user setting	Ignition / Remote Switch

Another function of Smart Mode

1. If ignition turns back "ON" during "Off" Delay, Power smart function will stay in operation. "Off" signal will not be send to motherboard. The "Off" Delay will re-start after next ignition off.

2. Power input monitoring(before system boot on, during runtime, during soft off delay): The Power smart function will constantly monitor the input voltage. If the input voltage is below **X Voltage (the standard might have 5% tolerance)**, the AR-PW0932V will not start the power on procedure. When Power smart function has ran in operation and the battery drops below **Y Voltage (with 5% tolerance)** more than 10 seconds the Power smart function will shut down the motherboard following the standard shut down procedure. If the input voltage recovers in

10 seconds over **Y Voltage (with 5% tolerance)** again, the Power smart function will continue to run. (Figure 4)if this happens, ignition shall be off and on again (Mode 2, 3, 4) or press the remote switch(Mode 5,6,7) if you want to turn on system again.

	For 12V car battery	**For 24V car battery**
X value	**11.2**	**23**
Y value	**10.8**	**22.5**

3 BIOS SETTING

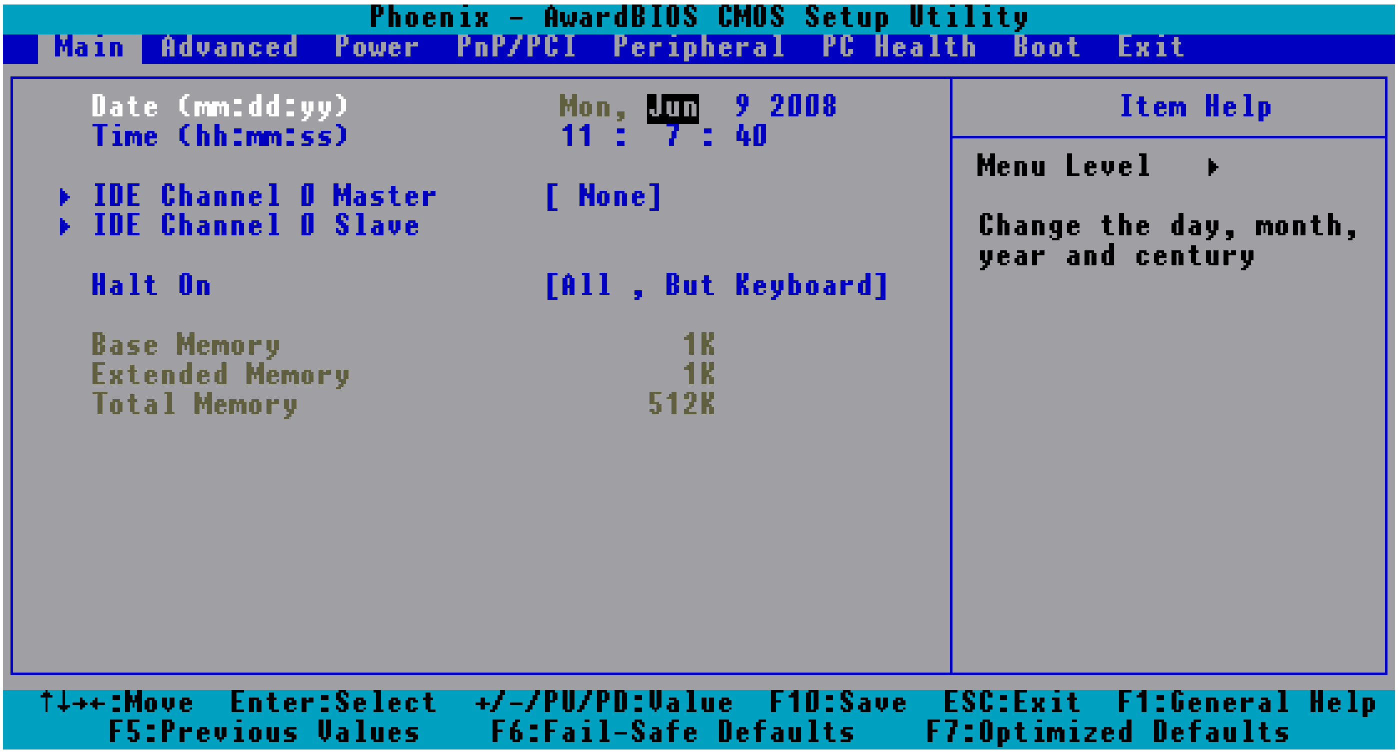
This chapter describes the BIOS menu displays and explains how to perform common tasks needed to get the system up and running. It also gives detailed explanation of the elements found in each of the BIOS menus. The following topics are covered:

- Main Setup
- Advanced Chipset Setup
- PnP/PCI Setup
- Peripherals Setup
- PC Health Setup
- Boot Setup
- Exit Setup

Once you enter the Award BIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. Use the arrow keys to highlight the item and then use the <Pg Up> <Pg Dn> keys to select the value you want in each item.

3.1 Main Setup

The <Main Setup> choice allows you to record some basic hardware configuration in your computer system and set the system clock and error handling. If the motherboard is already installed in a working system, you will not need to select this option. You will need to run this Setup option, however, if you change your system hardware configuration, the onboard battery fails, or the configuration stored in the COMS memory was lost or damaged.

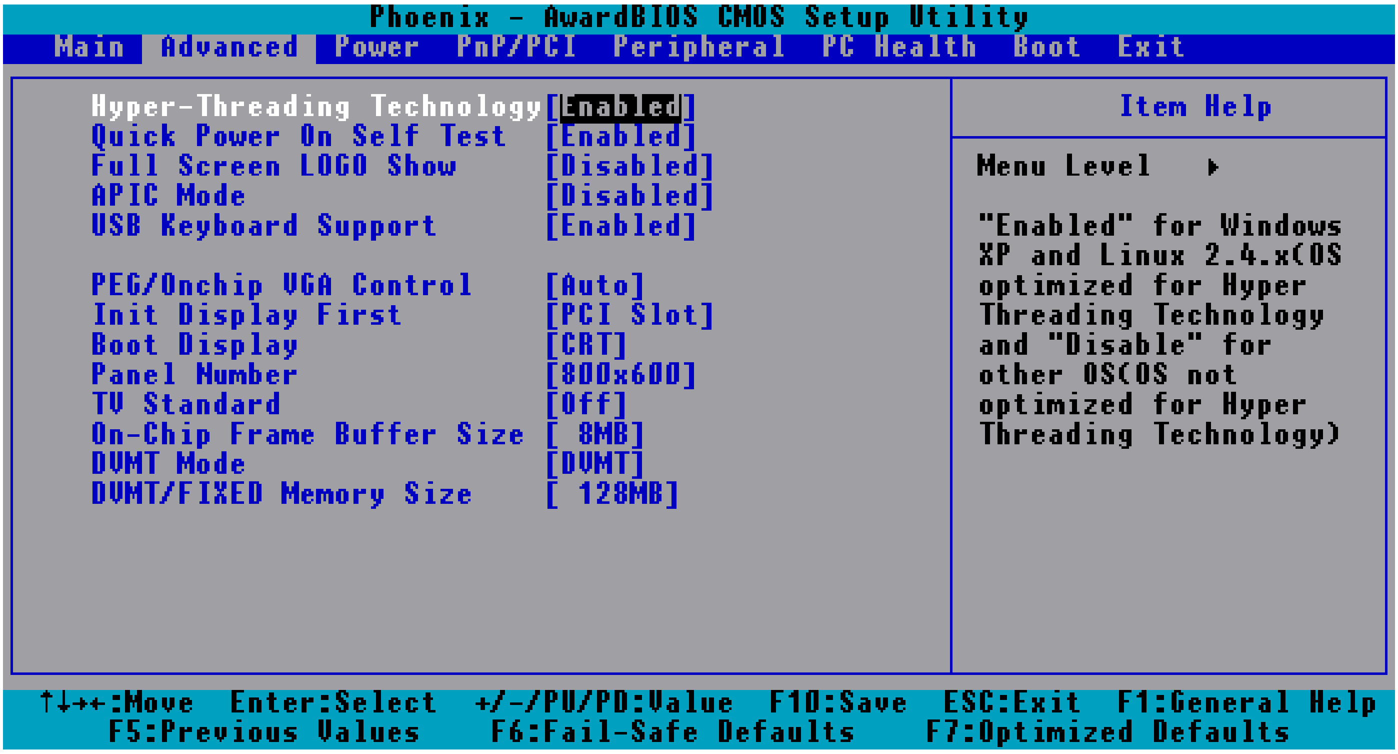


Note: Listed at the bottom of the menu are the control keys. If you need any help with the item fields, you can press the <F1> key, and it will display the relevant information.

Option	Choice	Description
Date Setup	N/A	Set the system date. Note that the ‘Day’ automatically changes when you set the date
Time Setup	N/A	Set the system time
IDE Channel 0 Master/Slave	N/A	The onboard PCI IDE connectors provide 1 channel for connecting up to 2 IDE hard disks or other devices. The first is the “Master” and the second is “Slave”, BIOS will auto-detect the IDE type.
Halt On	All Errors, No Errors, All but keyboard.	Select the situation in which you want the BIOS to stop the POST process and notify you.

3.2 Advanced Chipset Setup

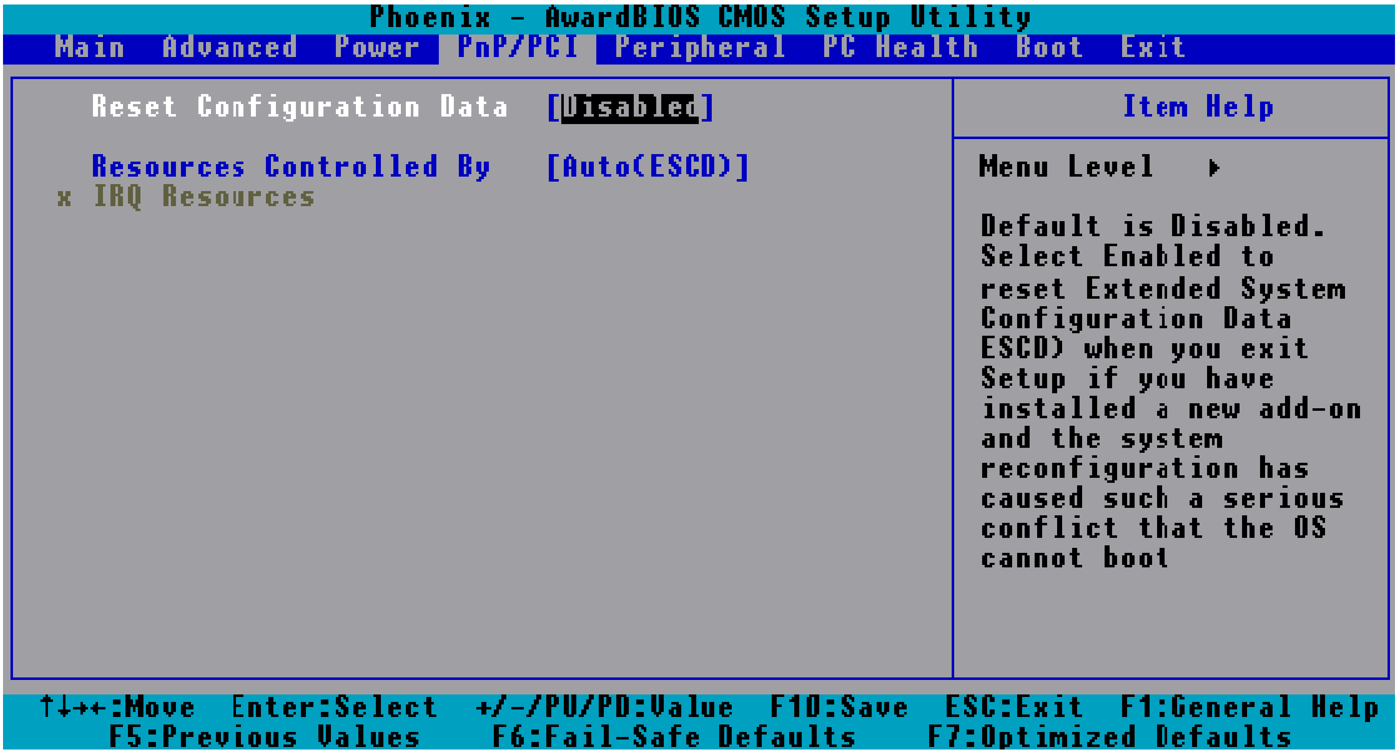
This section allows you to configure and improve your system and follows you to set up some system features according to your preference.



Option	Choice	Description
Quick Power On Self Test	Enabled Disabled	This category speeds up Power On Self Test (POST) after you have powered up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.
Full Screen Logo Show	Enabled Disabled	Select Edabled to show the OEM full screen logo if you have add-in BIOS.
USB Keyboard Support	Enabled Disabled	Select Enabled if you system contains a Universal Serial Bus (USB)controller and you have a USB keyboard.
On-Chip Frame Buffer Size	1Mb 8Mb	This Item is for setting the Frame Buffer (Share system memory as display memory).
Boot Display	CRT LCD CRT+LCD TV	This Item is to set display device TV function only support on AR-B5230SD
Panel Type	800x600, 1024x768, 1280x1024	This Item cab Set the LVDS panel resolution that you want
DVWT mode	FIXED DVMT Both	This item sets the mode for dynamic video memory thechology (DVMT).
DVWT/FIXED Memory Size	64Mb 128Mb	This item sets the DVMT size

3.3 PnP/PCI Setup

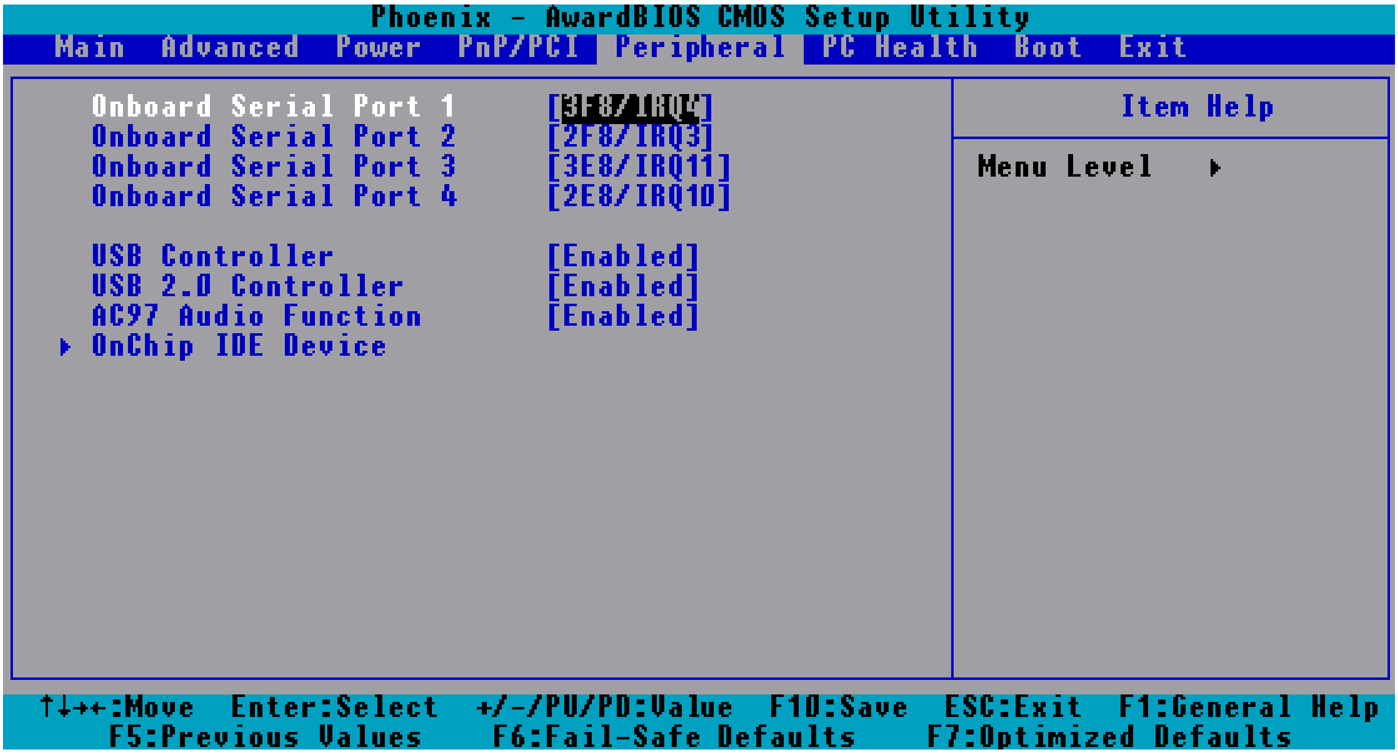
The option configures the PCI bus system. All PCI bus system on the system use INT#, thus all installed PCI cards must be set to this value.



Option	Choice	Description
Reset Configuration Data	Enabled Disabled	Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup. If you have installed a new add-on and the system reconfiguration has caused such a serious conflict, then the operating system cannot boot.
Resources Controlled By	Auto(ESCD) Manual	The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows 95. If you set this field to “manual,” then you may choose specific resources by going into each of the submenus.
IRQ Resources	N/A	When resources are controlled manually, assign a type to each system interrupt, depending on the type of the device that uses the interrupt

3.4 Peripherals Setup

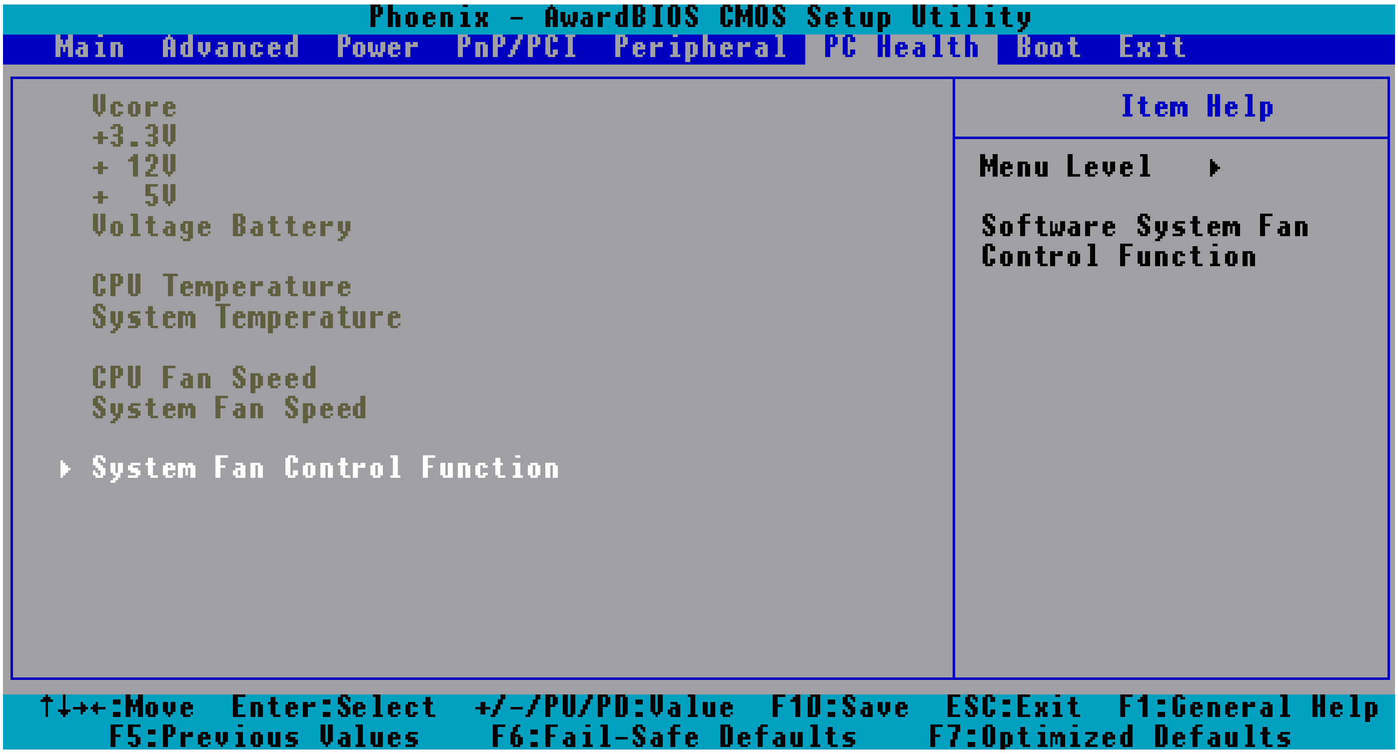
This option controls the configuration of the board's chipset. Control keys for this screen are the same as for the previous screen.



Option	Choice	Description
Onboard Serial Port 1 **Onboard Serial Port 2** **Onboard Serial Port 3** **Onboard Serial Port 4**	Serial Port 1: 3F8 / IRQ4 Serial Port 2: 2F8 / IRQ3 Serial Port 3: 3E8 / IRQ11 Serial Port 4: 2E8 / IRQ10	Select an address and the corresponding interrupt for each serial port.
USB Controller	Enabled Disabled	Select Enabled if your system contains a Universal Serial Bue (USB)controller and you have USB peripherals
USB 2.0 Controller	Enabled Disabled	Select Enabled if your system contains a Universal Serial Bue (USB) 2.0 controller and you have USB peripherals
AC97 Auido Function	Enabled Disabled Audio/Modem	This item allows you to decide to enable/disable AC97 Audio
On chip IDE DEVICE	Enabled Disabled	The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

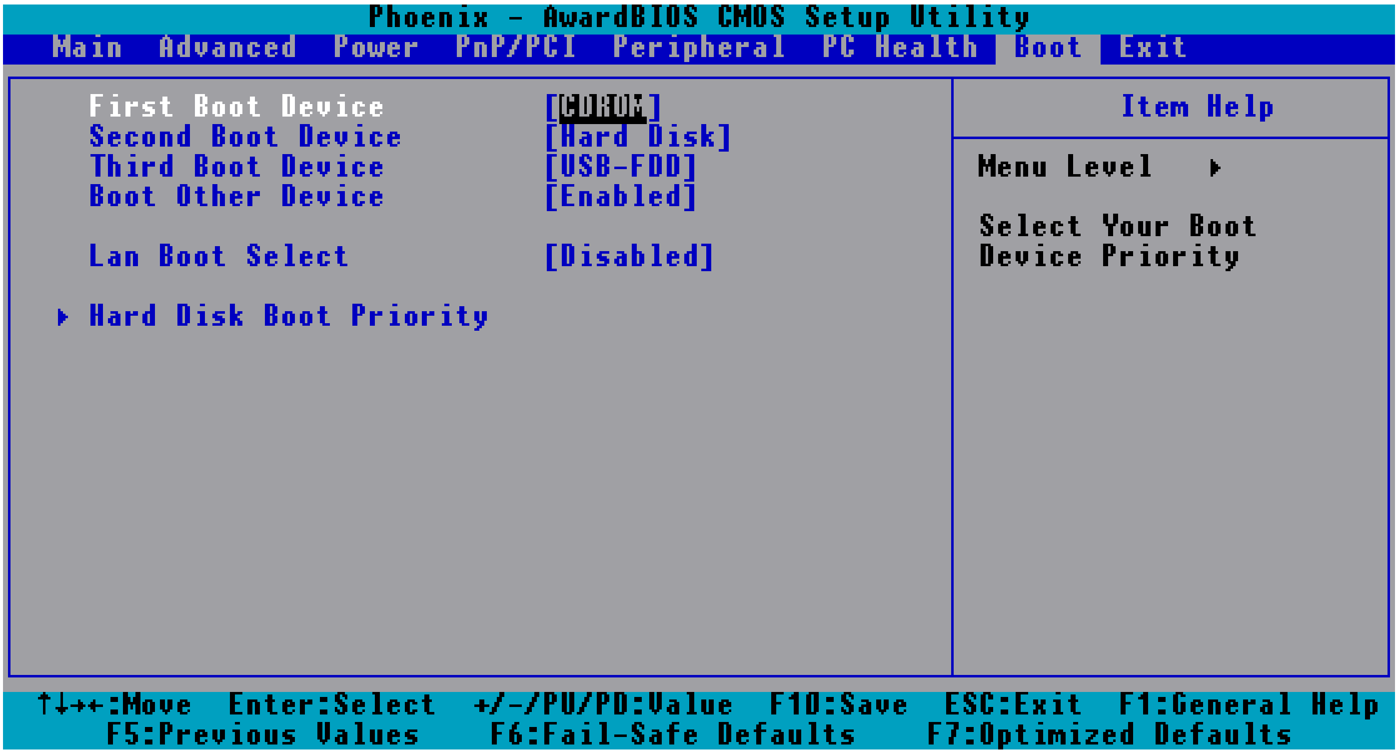
3.5 PC Health Setup

This section shows the parameters in determining the PC Health Status. These parameters include temperatures, fan speeds, and voltages.



3.6 Boot Setup

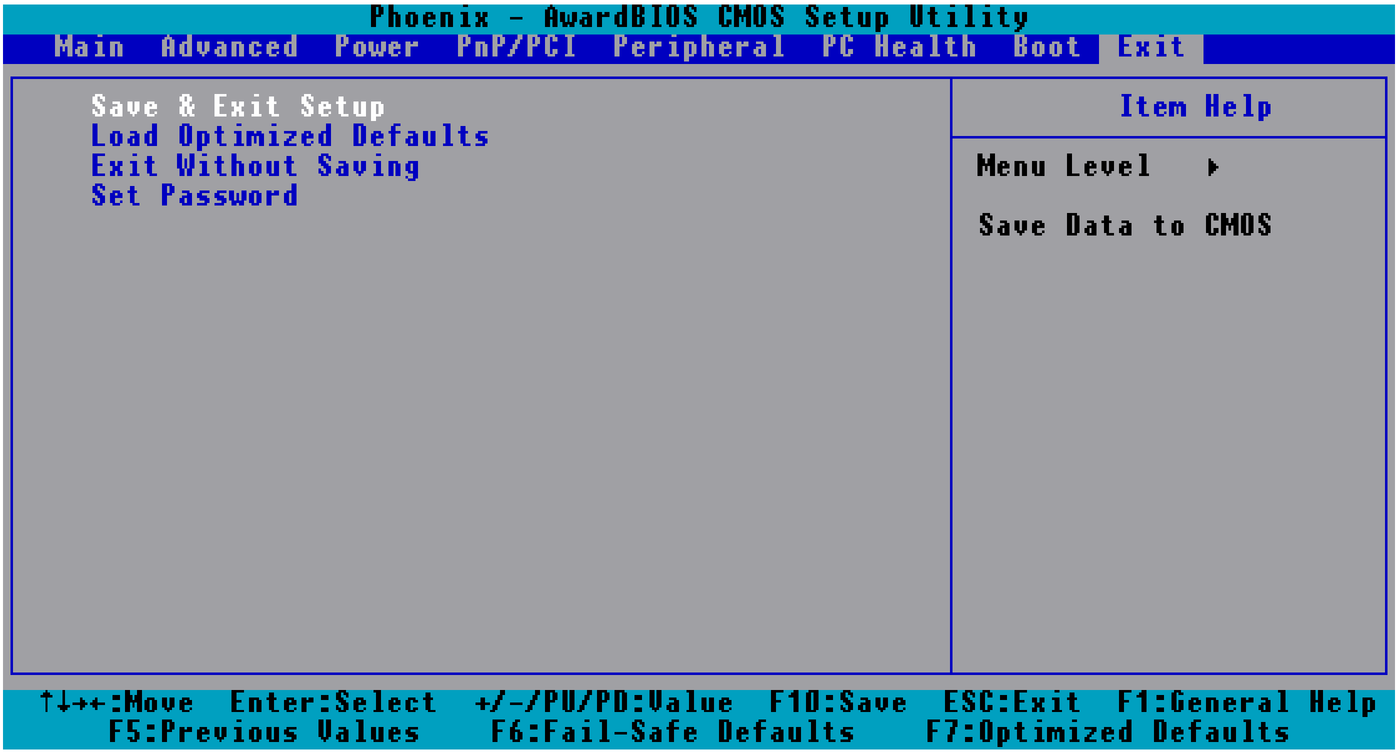
This section is used to exit the BIOS main menu. After making your changes, you can either save them or exit the BIOS menu and without saving the new values.



Option	Choice	Description
First / Second / Third Boot Device/Other Boot Device	Hard Disk CDROM USB-FDD USB-CDROM LAN Disabled	The BIOS attempts to load the operating system from the devices in the sequence selected in these items.
LAN Boot Select	Enabled Disabled	These fields allow the system to search for an OS from LAN
Hard Disk Boot Priority	N/A	These fields set the Boot Priority for each Hard Disk

3.7 Exit Setup

This section is used to configure exit mode.



Option	Choice	Description
Save & Exit Setup	Pressing <Enter> on this item for confirmation: **Save to CMOS and EXIT (Y/N)? Y**	Press “Y” to store the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again
Load Optimized Defaults	When you press <Enter> on this item you get a confirmation dialog box with a message like this: **Load Optimized Defaults (Y/N)? N**	Press ‘Y’ to load the default values that are factory-set for optimal-performance system operations.
Exit Without Saving	Pressing <Enter> on this item for confirmation: **Quit without saving (Y/N)? Y**	This allows you to exit Setup without storing any changes in CMOS. The previous selections remain in effect. This shall exit the Setup utility and restart your computer.

Set Password	Pressing <Enter> on this item for confirmation: **ENTER PASSWORD:**	When a password has been enabled, you will be prompted to enter your password every time you try to enter Setup. This prevents unauthorized persons from changing any part of your system configuration. Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previous password from the CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password. To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm that the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.